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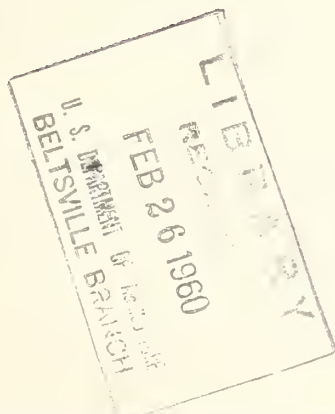


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LARD

Marketing Margins and Costs



MARKETING RESEARCH REPORT NO. 376
AGRICULTURAL MARKETING SERVICE

PREFACE

The marketing margin for lard, as described in this report, is the difference between the price a hog slaughterer receives for a unit of lard and the price the consumer pays for the same unit of lard in a retail store.

This report is part of the U. S. Department of Agriculture's continuing program of research on marketing margins and costs for food items. This research by the Marketing Economics Research Division, Agricultural Marketing Service, is designed to meet a need for more information on costs of food marketing and on price spreads for foods between the farmer and the consumer. In 1958, a similar report entitled "Marketing Margins, Practices and Costs for Soybean and Cottonseed Oils" (Marketing Research Report No. 231) was published showing the marketing margins for margarine and shortening. Lard competes with these products for a share of the shortening market.

Until about 1930, lard commanded a price per pound equal to or more than many other fresh pork products. Since 1930, lard prices have been decreasing in relation to prices of other hog products. Under present market conditions about 7 percent of the wholesale value of all hog products is for lard, while lard represents 15 percent of the wholesale carcass weight.

Changes in production and consumption of lard usually affect either the prices farmers receive for hogs or prices consumers pay for lard and other hog products. Recognition by producers of the current trend toward "meat type" hogs with substantially less lard and more lean meat per 100 pounds live weight has given rise to the question, "How valuable is the lard derived from a hog?" A second question asked by farmers and consumers is, "How much of the cost of lard is made up of marketing costs incurred after the hog has been sold by the farmer?" This report provides data to answer these questions.

Marketing margins embody in dollars and cents all of the cost factors in marketing. Therefore, since possibilities for reduction of the margins lie primarily in the efficient use of the factors relating to costs, research on the importance of these cost factors can help provide the means of identifying areas where reductions may be made. It is for this reason that the Department studies food marketing costs and ways to reduce such costs, and ways to improve quality, services, or handling methods which can increase the demand for farm products.

The marketing margins reported are based largely on average wholesale prices for lard at Chicago reported to the Agricultural Marketing Service, and retail prices for 1-pound cartons of lard sold in retail stores, published by the Bureau of Labor Statistics. Other price and cost data from unpublished sources were also used.

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SUMMARY

Lard was a \$259 million business at the wholesale level in 1958. The average hog yields about 32 pounds of lard; with a commercial slaughter of 71 million hogs the production of lard was almost 2.3 billion pounds. In 1958, the average wholesale price of loose lard was 11.4 cents per pound, Chicago basis.

The number of hogs slaughtered, live weight, and yield per 100 pounds are basic factors determining the production of lard. Thus, lard production does not change appreciably when demand for lard increases or decreases.

There are three major markets for lard--direct domestic consumption, exports, and use in the manufacture of shortening and margarine. The direct domestic consumption of lard (including lard used in manufacture of prepared foods as well as that sold to consumers) has shown a slow but steady decline per person; however, this outlet still constitutes two-thirds of the present market. Direct consumption of lard was 14.4 pounds per capita in 1940 and 9.5 pounds in 1957. The second market--exports--has remained fairly stable since 1949, moving 18 to 26 percent of the yearly production into foreign markets. The third market--use of lard in manufacturing--has expanded rapidly, consuming 17 percent of the domestic disappearance in 1956. This market is sensitive to price, with large quantities of lard being purchased by shortening manufacturers when lard prices are low.

Margins described in this report are based on the price of a pound of lard at the retail level and the value of a pound of loose lard at the slaughter level. The difference between the price received by the slaughterer and the price paid by the consumer--the marketing margin--is the return to the marketing agencies for their services and includes their costs and profit.

The slaughter-to-retail margins for lard rose from 7.9 cents per pound in 1949 to 11.2 cents per pound in 1958. This increase of 3.3 cents per pound included increases of 2.2 cents per pound for retailing and 1.1 cents a pound for wholesaling.

Margins for lard have varied considerably during the last 10 years. Most of the fluctuations resulted from retail prices reacting to the prices of competing shortenings rather than from changes in hog prices. Retail margins in lard marketing tended to become smaller in periods when large supplies of lard caused retail prices to decline.

LARD MARKETING MARGINS AND COSTS

By John W. Thompson, agricultural economist
Marketing Economics Research Division
Agricultural Marketing Service

Lard is one of several products derived from hogs; therefore, price spreads between hog producer and consumer cannot be measured directly. When the raw fats from which lard is produced are separated at the time of slaughter, a market value is not always accurately determined but must be imputed. Retail lard prices averaged 21.4 cents a pound from 1949 through 1958. It is estimated that during this period retailing margins averaged 4.7 cents a pound; packaging, processing, and wholesaling averaged 4.5 cents. The cost of rendering and slaughtering and the return to the farmer accounted for the remaining 12.2 cents a pound.

Lard competes for a share of the shortening market. Changes in the retail prices of lard or competitive shortenings tend to be reflected in the value a farmer receives for an equivalent amount of lard on a hog. Similarly, changes in the marketing charges for converting raw fats into lard for sale to consumers tend to affect prices paid by the consumer or value received by the farmer, or both. In addition, changes in lard production have an influence on retail prices and farm value. All of these factors must be considered in an appraisal of lard marketing margins and costs.

CHANGES IN PRODUCTION AND CONSUMPTION OF LARD

Annual and seasonal changes in the production of lard are attributable to three factors: (1) Number of hogs slaughtered, (2) live weight of the hogs, and (3) yield of lard per 100 pounds live weight. The number of hogs slaughtered is the most important factor affecting lard production.

Number of Hogs Slaughtered

Hogs are raised in all parts of the United States, but the bulk of the annual pig crop is produced in the Corn Belt States where large quantities of corn and other feed grains are raised. Almost half of the total corn production is usually fed to hogs. Hog producers base their decisions to expand or contract their hog enterprise on many factors such as the amount of corn or other hog supplements available on their farms, price supports and storage programs for corn and other commodities, prices of hogs, and the outlook for hog production. Because of the importance of corn in feeding hogs the hog-corn price relationships affect the decisions of hog producers and are

reflected in their subsequent pig crops. Thus, increases in farrowings are followed by increases in slaughtering and increases in lard production.

Seasonal Variations

As with most agricultural commodities, there is a seasonal variation in lard production. However, this seasonal variation is not as great as might be expected, owing to the different weights and numbers of hogs marketed. During the last 10 years, numbers of hogs marketed were lowest in the April-June or July-September quarters. However, average live weights were highest during one of these quarters (table 1). These heavier hogs, many of which are sows, yield more lard per hog and thus help to increase lard production per hog during the summer when the number of hogs marketed is low. If it were not for this inverse relationship variations in lard production would be much greater than they now are in some quarters of the year.

Live Weight

The average live weight at which hogs are marketed is a second big influence on the total output of lard. A few pigs are slaughtered at weights under 100 pounds, but the bulk of the pig crop is moved to market at weights ranging from 200 to 270 pounds. Packing sows, stags, and boars are the heaviest classes of hogs marketed, usually being marketed at weights of 370 to 450 pounds.

The average weight of all hogs slaughtered has remained within a fairly narrow range over the past decade, varying from a high of 253 pounds in April-June 1954 to a low of 229 pounds in July-September 1957. The average live weight of hogs marketed in 1957 was 233 pounds or 9 pounds less than in 1949. These lighter-weight hogs marketed in 1957 yielded 1 pound less lard per hog than those marketed in 1949. Variations in the annual average weight of hogs slaughtered reflect a wide variety of factors, such as the supply and price of feed, changes in the proportion of the different classes of hogs in the total slaughter, live hog prices, and prospective supplies.

Lard Yield

A third important factor influencing lard production is the yield of lard per 100 pounds live weight of hogs slaughtered. As shown in table 1, there is a variation in the yield of lard per hog and per 100 pounds live weight. While this variation does not appear large, a small variation can have a big effect on total lard production. The causes of these variations in lard yield are both physical and economic.

Animal husbandry leaders for many years have recognized that quantity of lard is associated with type of hog. Over a long period of years, market demands in this country favored a lard type hog. Before World War I, an early maturing, chuffy type was bred; during the 1920's a rangy type was popular and up until the 1950's an intermediate type prevailed.

Table 1.--Lard from total commercial hog slaughter: Factors relating to production and price by quarters, 1949 to 1958 ^{1/}

Year	Total commercial slaughter	Average live weight	Yield of: lard per hog slaugh- tered	Yield of: lard per hundred pounds	Average Lard rendered	Price wholesale price per pound (loose)
	Thousand head	Pounds	Pounds	Pounds	Million pounds	Cents
<u>1949</u>						
Jan.-Mar.	17,087	244	35	14	604	12.3
Apr.-June	13,904	246	34	14	478	10.9
July-Sept	12,862	250	34	14	440	11.8
Oct.-Dec.	20,908	233	32	14	671	10.1
Total or average ...	64,761	242	34	14	2,193	11.3
<u>1950</u>						
Jan.-Mar.	18,610	235	33	14	619	9.3
Apr.-June	15,695	243	35	14	546	10.2
July-Sept.	13,664	249	34	14	465	13.9
Oct.-Dec.	21,575	235	32	14	688	13.9
Total or average ...	69,544	240	33	14	2,318	11.8
<u>1951</u>						
Jan.-Mar.	19,740	240	34	14	664	17.7
Apr.-June	17,771	243	35	14	614	16.0
July-Sept.	15,461	250	35	14	539	16.0
Oct.-Dec.	23,090	233	32	14	750	14.7
Total or average ...	76,062	241	34	14	2,567	16.1
<u>1952</u>						
Jan.-Mar.	22,719	238	35	15	790	11.6
Apr.-June	17,441	238	35	15	605	10.1
July-Sept.	14,778	243	33	14	489	9.5
Oct.-Dec.	22,754	233	32	14	728	8.2
Total or average ...	77,692	237	34	14	2,612	9.9
<u>1953</u>						
Jan.-Mar.	19,808	232	33	14	654	8.0
Apr.-June	14,446	240	33	14	474	9.8
July-Sept.	13,462	236	30	13	405	14.5
Oct.-Dec.	19,195	231	31	13	589	15.3
Total or average ...	66,911	234	32	14	2,122	11.9
<u>1954</u>						
Jan.-Mar.	16,409	235	32	13	517	16.0
Apr.-June	13,201	253	34	14	455	17.3
July-Sept.	14,615	238	32	13	467	16.2
Oct.-Dec.	20,600	236	33	14	682	13.3
Total or average ...	64,825	240	33	14	2,121	15.7

^{1/} Total computed from unrounded data.

--Continued

Table 1.--Lard from total commercial hog slaughter: Factors relating to production and price by quarters, 1949 to 1958 1/--Continued

Year	Total commercial slaughter	Average live weight	Yield of lard per hog slaugh- tered	Yield of lard per hundred pounds	Lard rendered	Average wholesale price per pound (loose)
	Thousand head	Pounds	Pounds	Pounds	Million pounds	Cents
<u>1955</u>						
Jan.-Mar.	19,285	237	34	14	647	11.2
Apr.-June	15,155	247	35	14	531	11.3
July-Sept.	15,778	236	32	14	503	10.2
Oct.-Dec.	23,998	232	32	14	771	9.8
Total or average ...	74,216	237	33	14	2,452	10.6
<u>1956</u>						
Jan.-Mar.	22,654	231	33	14	757	9.5
Apr.-June	17,302	237	34	14	586	10.8
July-Sept.	16,555	231	31	13	518	11.1
Oct.-Dec.	22,002	231	32	14	698	12.8
Total or average ...	78,513	232	33	14	2,559	11.1
<u>1957</u>						
Jan.-Mar.	19,257	232	33	14	639	13.5
Apr.-June	16,635	241	36	15	591	12.1
July-Sept.	16,339	229	30	13	498	12.6
Oct.-Dec.	20,363	230	31	14	639	11.3
Total or average ...	72,594	233	33	14	2,367	12.4
<u>1958 <u>2/</u></u>						
Jan.-Mar.	17,927	231	32	14	568	11.2
Apr.-June	16,230	242	33	14	533	11.6
July-Sept.	16,675	233	30	13	507	12.1
Oct.-Dec.	20,161	236	32	14	647	10.5
Total or average ...	70,993	235	32	14	2,255	11.4

1/ Total computed from unrounded data.

2/ Preliminary.

In recent years, there has been a growing trend toward producing a meat type hog, and facilities have been constructed in some places for testing and selecting breeding stock accordingly. Two factors often given as reasons for breeding meat type hogs have been the price relationship of pork to lard and consumers' preference for lean meat. Since 1925, prices of lard have declined substantially in relation to pork prices while the ratio of fat to lean on a hog has remained fairly constant. The relation between hog grades and lard yields is indicated in table 2. A medium-weight hog grading U. S. No. 1 yields approximately 12 pounds of lard per 100 pounds of live weight, while a medium-weight hog grading U. S. No. 3 yields 16 pounds or about 33 percent more lard.

Table 2.--Average yield of lard from carcasses of hogs of different weights and grades

Weight and grade	Yield of fat for lard (carcass basis) <u>1/</u>		Yield of lard <u>2/</u>	
	Percentage	Quantity	Per hog	Per 100 pounds
				live weight
	<u>Percent</u>	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>
106 lb. <u>3/</u>	10.9	11.6	8.7	8.2
146 lb. <u>3/</u>	15.0	21.9	16.4	11.2
183 lb. <u>3/</u>	16.8	30.7	23.0	13.7
218 lb. <u>3/</u>	19.5	42.5	31.9	14.6
220 lb.:				
U. S. No. 1	16.7	36.7	27.5	12.5
U. S. No. 2	20.0	44.0	33.0	15.0
U. S. No. 3	23.3	51.3	38.5	17.5
289 lb. <u>3/</u>	21.5	62.1	46.6	16.1

1/ Consists of back fat, leaf fat, and fat trimmings.

2/ Based on a 75 percent yield of lard from all killing and cutting fats.

3/ Average weights for all grades of hogs.

A second factor affecting the yield of lard from hogs relates to swine selection and feeding practices. Hogs fed high-protein supplementary feeds or restricted in the amount of feed consumed per day tend to produce a higher proportion of lean meat and less fat.

Two other factors associated with lard yields are the amount of raw fat trimmed from hogs and the sale of fatbacks and plates as pork meat or rendered lard. The amount of raw fats that slaughterers cut or trim from hog carcasses for rendering has remained almost constant in recent years, averaging 14 pounds of rendered lard per 100 pounds live weight of hogs each year from 1949 through 1958 (table 1). The three most important sources of lard obtained from the hog carcass are: (1) The leaf fat, a strip of nearly pure fat obtained from the

inside of hog carcasses; (2) fat trimmings from hams, shoulders, loins, and other cuts; and (3) the fatbacks or plates, two very fatty cuts obtained from over the back and shoulders of the hog.

Most of the flexibility in percentage yields of lard per hog is traceable to the marketing of fatbacks and plates. These products may be marketed fresh, frozen, or cured, or rendered into lard. However, the market for fatback is limited, and many slaughterers render all fatbacks into lard. Fatbacks sold fresh or cured in Chicago in December 1958 averaged about 10.5 cents a pound while loose lard sold for 9.2 cents a pound. Production figures for fatbacks and plates are not available, but limited industry sources indicate approximately three-fourths of these cuts are rendered for lard.

Markets for Lard

The consumption of lard falls into three basic groups: (1) The direct domestic market of consumers (including institutional users), (2) the export market, and (3) lard for use in manufacturing shortening and margarine. In recent years, the domestic and export markets for direct lard have trended slightly downward while the use of lard in manufacturing has increased.

Of these three, the domestic market for lard--for use in households, bakeries, restaurants--consumed the largest amount, about 1.7 billion pounds or 68 percent of the lard marketed in 1958 (table 3). Because of the increasing population, this market has declined only slightly during the past 10 years although per capita consumption has declined greatly. Per capita consumption of lard, which was 14.4 pounds in 1940, fell to a low of 9.5 pounds in 1957. A considerable amount of this direct consumption was in the form of bread, pies, potato chips, or meals away from home.

In a recent survey ^{1/} it was found the largest number of direct lard users were in one or more of the following groups:

Region: South.	Age: Over 50.
Education: None or grade school.	Number in family: 5 or more.
Income: Low.	Color: Nonwhite.
Location: Rural.	

The direct use of lard by the civilian and military population for cooking is not as sensitive to price as the use of lard in manufacturing. In 1954, loose lard in Chicago averaged 15.7 cents a pound (table 1) and 1,629 million pounds were consumed as direct lard (table 3). In 1955, at an average price of 10.6 cents a pound only 1,642 million pounds or 13 million pounds more were marketed for direct use as lard. It appears that domestic sales for direct use are not greatly influenced by price.

The second largest market for lard is exports and shipments to United States territories. During the last 10 years 18 to 25 percent of the total

^{1/} Homemakers' Use of and Opinions About Fats and Oils in Cooking. Mktg. Res. Rpt. No. 67. U. S. Dept. Agr., Agr. Mktg. Serv., June 1954.

Table 3.--Lard: Exports and domestic consumption, 1949-58 1/

Year	Total disap- pearance	Exports and shipments	Food uses				Nonfood uses:			Total
			Direct use (civilian and military)	Manufacturing (shortening and margarine)	(Soap and other industrials)					
	Mil. lb.	Mil. lb.	Pct.	Mil. lb.	Pct.	Mil. lb.	Pct.	Mil. lb.	Pct.	Pct.
1949	2,576	667	25.9	1,762	68.3	122	4.8	25	1.0	100
1950	2,635	523	19.9	1,906	72.3	159	6.0	47	1.8	100
1951	2,886	743	25.7	1,896	65.7	204	7.1	43	1.5	100
1952	2,782	694	25.0	1,826	65.6	237	8.5	25	.9	100
1953	2,492	476	19.1	1,778	71.4	235	9.4	3	.1	100
1954	2,299	521	22.7	1,629	70.8	149	6.5	2/	---	100
1955	2,616	619	23.6	1,642	62.8	347	13.3	8	.3	100
1956	2,796	671	24.0	1,630	58.3	490	17.5	5	.2	100
1957	2,570	563	21.9	1,604	62.4	401	15.6	2	.1	100
1958 3/	2,467	450	18.3	1,682	68.2	334	13.5	1	4/	100
Average.	2,612	593	22.7	1,735	66.4	268	10.3	16	.6	100

1/ Totals computed from unrounded data.

2/ Less than 500,000 pounds.

3/ Preliminary.

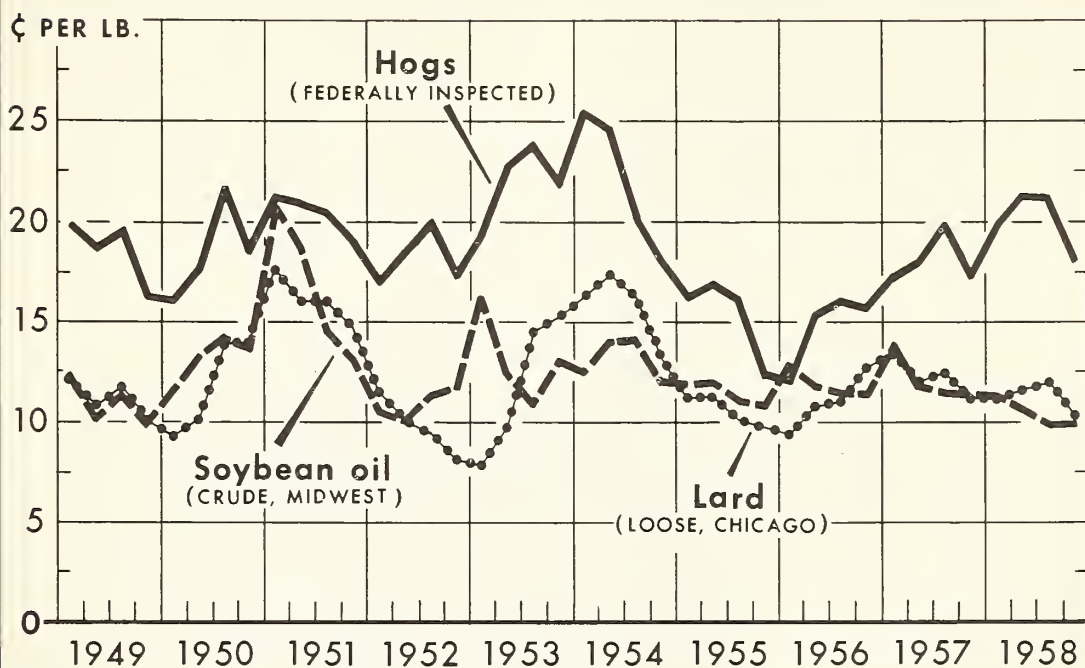
4/ Less than 0.05 percent.

domestic disappearance has been exported (table 3). In 1958, 18 percent or 593 million pounds of the domestic lard production was exported or shipped to United States territories. Cuba, Puerto Rico, United Kingdom, and West Germany have traditionally been the biggest importing countries. Export demand is sensitive to price but demand is influenced to a great degree by world supply, foreign consumption habits, and supplies of competing fats and oils.

The third market for lard--lard for shortening and margarine for manufacturing purposes--has expanded rapidly during the last 10 years. During 1958, 334 million pounds or 14 percent of the domestic disappearance was used by manufacturers of shortening and margarine (table 3).

Before 1945 only two major markets existed for lard--the export market and the domestic consumption of lard. In recent years, many shortening manufacturers and some margarine manufacturers have found it feasible to use lard in place of vegetable oils (soybean and cottonseed oils) in their products (table 3). While much of this new market expansion for lard in shortening and margarine is traceable to low prices for lard in 1955 and 1956 in comparison to prices for soybean oil (fig. 1), much of the credit for making lard suitable for other uses must be given to lard renderers and processors who have modified their product to meet changing market demands.

PRICES OF LARD, SOYBEAN OIL AND HOGS



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Figure 1

For many years there was little uniformity in the grade and quality of lard produced. Since World War II, lard renderers and processors have raised the quality of their product by more careful selection of raw fats, as well as by adopting new processes and improving existing ones. The resulting high-quality lard is easily substituted for other fats in shortening and prepared foods. Also, it has been valuable in maintaining the export and domestic markets at their present level.

In 1955 and 1956, lard production was high and prices of lard were low (table 1). Manufacturers of shortening and margarine adapted their operations to consume large quantities of lard at the low prices and 13.3 and 17.5 per-cent of the 1955 and 1956 total disappearance was used in manufacturing (table 3).

Price of Lard

Before 1955, market prices of lard showed considerable seasonal variation, depending on production (table 1). Quarterly average prices for loose lard at Chicago varied as much as 3.9 cents a pound from the annual average in 1953 and 2.4 cents a pound in 1954.

Beginning in the July quarter of 1955, prices of lard declined 1 cent a pound under prices of crude soybean oil, a major vegetable oil used in shortening. By April-June 1956, lard was selling for 3.9 cents a pound less than crude soybean oil (fig. 1) and manufacturers of shortenings were substituting lard for soybean oil. Since 1955, whenever the seasonal or annual production of lard is large and prices are low relative to prices of competing fats and oils, manufacturers of shortenings have bought more lard, thus helping to raise and stabilize lard prices. Since 1955, quarterly average lard prices have never varied over 1.7 cents a pound from the yearly average price.

As the use of animal fats for vegetable oils in manufacturing becomes greater, the prices of these competing fats and oils tend to draw closer to each other. The price of lard in 1957 and 1958 was closely related to the price of crude soybean oil (fig. 1).

TRENDS IN THE MARKETING MARGINS

Retailing, Wholesaling, and Slaughtering

Changes in the number of hogs marketed, yield of lard per animal, and the competition of other fats and oils are major factors affecting prices of lard. But changes in the marketing margins also have an effect on the prices consumers pay for the lard or the value received by farmers for the equivalent amount of lard on hogs when they are marketed. Changes in marketing margins reflect, in dollars and cents, the net effect of many economic changes that take place constantly in the dynamic process of marketing.

Facilities for marketing hogs and services of several marketing agencies are required to move live hogs to market and convert the raw fat from slaughtered hogs into lard for sale to the consumer. The marketing agencies and services include livestock dealers, auctions, commission men, stockyards, trucks, railroads, slaughterers, processors, wholesalers, jobbers, brokers, and retailers.

The costs of marketing lard are dependent on the various marketing channels and agencies used, and the services performed. Other factors, such as changes in productivity, processing, investment, and taxes are part of these agency costs and together with net earnings tend to be reflected ultimately as changes in the marketing margins.

Three main functions in producing and marketing lard are: (1) Slaughtering (and rendering), (2) wholesaling (processing and packaging), and (3) retailing. The primary function in converting raw fat to lard is done by the slaughterer or packer who buys hogs directly from producers or through commission agents, brokers, and auctions. Upon slaughter of the hog, about 42 pounds of selected cutting and killing fats are removed from the carcass of a medium-weight hog and rendered into lard by the slaughterer. The second main function, wholesaling, which includes processing and packaging, is usually performed by a slaughterer or packer but may involve the transfer of loose or drummed lard from a small slaughterer to a large slaughterer or packer who has facilities to produce lard in the form desired by consumers. Retailing is the third and final step in marketing lard from farm to consumer.

In 1958, 28 percent of the consumer's lard dollar went for retailing, 22 percent for wholesaling which included processing and packaging, and 50 percent to the farmer and other agencies involved in marketing (table 4).

Table 4.--Where the consumers' lard dollar goes, 1949-58 ^{1/}

Year	Retailer	Wholesaler (processing, packaging)	Remainder <u>2/</u>	Total
	Percent	Percent	Percent	Percent
1949	21	20	59	100
1950	18	20	62	100
1951	17	17	66	100
1952	21	25	54	100
1953	20	21	59	100
1954	21	19	60	100
1955	27	22	51	100
1956	20	25	55	100
1957	26	19	55	100
1958	28	22	50	100
Average	22	21	57	100

^{1/} Compiled from tables 5, 6, and 8.

^{2/} Includes returns to the slaughterer and the farmer, as well as transportation and marketing charges from farm to slaughter.

Wholesale-to-Retail Margins

Wholesale-to-retail margins for lard generally rose after 1953, except in 1956 when a large production resulted in a low retail price (table 5). Lard margins for retailers averaged 4.7 cents per pound during 1949-58 and increased from an average of 4.1 cents per pound in 1949 to 6.3 cents a pound in 1958.

The costs of a variety of services are covered by the wholesale-to-retail margin. Included are costs to the retailer for procuring, storing, displaying, and selling. Most of the operating costs of retail food marketing firms have risen since 1949. Hourly earnings of food marketing employees increased from \$1.28 per hour in 1949 to \$1.98 per hour in 1958. Some of this increase was offset by higher output per man-hour. Costs of most other goods and services used in retail marketing operations have risen during the last 10 years.

Retailers buy lard from packers and wholesalers in case lots generally packaged in 1-pound or 3-pound containers. Most of the lard moving into commercial channels follows the same pattern of distribution as processed meats such as sausages, luncheon meats, or canned meats. For example, a retailer places an order with a wholesaler or packer for a carload or truckload of

price, and wholesale-retail margin per pound of lard in 1-pound cartons, 1949-58

Year	Price		Wholesale-retail margin
	Retail <u>1/</u>	Wholesale <u>2/</u>	
	Cents	Cents	Cents
1949	19.2	15.1	4.1
1950	19.1	15.7	3.4
1951	24.6	20.4	4.2
1952	18.4	14.5	3.9
1953	20.2	16.2	4.0
1954	26.2	20.8	5.4
1955	20.8	15.2	5.6
1956	19.8	15.9	3.9
1957	22.7	16.8	5.9
1958 <u>3/</u>	22.6	16.3	6.3
Average	21.4	16.7	4.7

1/ Average price from reports of Bureau of Labor Statistics. Prior to 1953, BLS prices were based on 56 large cities. Beginning with 1953, BLS prices were based on a sample of 46 cities or towns of over 2,500 population.

2/ Average price per pound, in 100-lb. lots, Chicago.

3/ Preliminary.

meats and meat products. This order usually includes several cases of lard. Some large chainstores and wholesalers have facilities to handle a carload of lard, but many of these shipments may be combined with shipments of competing shortenings or other packinghouse products.

Since 1955, retail prices of lard have never varied over 2.1 cents a pound in any year. However, retail prices show some variation between cities. Retail prices of lard in Chicago are usually $\frac{3}{4}$ to 1 cent below the United States average, and in New York about $\frac{1}{2}$ cent below the United States average. Retail lard prices averaged about 2.3 cents a pound higher in Los Angeles and 3 cents a pound higher in Seattle than the national average.

Additional marketing margins for processing and packaging occur within the wholesale agencies in moving lard from slaughterer to retail. Processing and packaging may be done by slaughterers, packinghouse branches, wholesalers, or shortening manufacturers. Formerly, most small slaughterers and lard renderers packaged their lard in small containers. Today, many of these small slaughterers and packers find it economical to sell their lard in drums or loose in tank cars to other processors or packers who have facilities to process, package, and sell lard in the form desired by consumers. In a 1951 study of selected Iowa plants, it was found that 26 percent of the lard was sold in tank cars, 21 percent in 56-pound containers, 13 percent in 1-pound packages,

and the remaining 40 percent in containers of other sizes. ^{2/} The amount of lard being sold loose in tank cars has increased in recent years and lard sold in drums has decreased. In December 1957, with a domestic production of 215 million pounds, only 2.4 million pounds were drummed in Chicago, the major city where lard is drummed. Part of this change is attributable to shortening manufacturers who have facilities to handle and store large amounts of loose lard. For a refiner, packer, or wholesaler who bought a tankcar of loose lard and refined and packaged it in 1-pound cartons, the marketing margin for these functions over the last 10 years averaged 4.5 cents per pound (table 6). This margin has increased during the 10-year period from an average 4.2 cents per pound in 1949-53 to an average of 4.8 cents per pound in 1954-58, or a 14-percent increase (table 6). Most of this increased marketing margin at the wholesale level for packaging and processing is attributable to higher operating costs. Industry sources indicate the cost of cartons or containers for packaging lard is about 1 cent a pound. The packaging cost for prime steam lard in 1-pound cartons was estimated at 1.1 cents per pound in 1951 (see footnote 2).

Table 6.--Wholesale price per 1-pound carton of lard, slaughter value per pound (loose), and marketing margin, Chicago, 1949-58 .

Year	Wholesale price per pound ^{1/}			Marketing margin		
	: (for processing and packaging)					
	: 1-pound : : cartons : :(refined):	: Drums : : value : :(loose)	: Slaughter : : value : :(loose)	: Drums to : : 1-pound : : cartons :	: Loose to : : drums : :	: Loose to : : 1-pound : : cartons :
	: Cents	: Cents	: Cents	: Cents	: Cents	: Cents
1949	15.1	12.1	11.3	3.0	0.8	3.8
1950	15.7	12.8	11.8	2.9	1.0	3.9
1951	20.4	17.4	16.1	3.0	1.3	4.3
1952	14.5	11.1	9.9	3.4	1.2	4.6
1953	16.2	12.7	11.9	3.5	.8	4.3
1954	20.8	17.0	15.7	3.8	1.3	5.1
1955	15.2	11.9	10.6	3.3	1.3	4.6
1956	15.9	12.0	11.1	3.8	.9	4.8
1957	16.8	13.1	12.4	3.7	.7	4.4
1958 ^{2/}	16.3	12.4	11.4	3.9	1.0	4.9
Average ...	16.7	13.3	12.2	3.4	1.0	4.5

^{1/} Prices based on 1-pound cartons sold in 100-pound lots; drums (400 pounds each) sold in carload lots; and loose in tank cars.

^{2/} Preliminary.

^{2/} Clifton, E. S., Kastelic, Joseph, and Lowe, Belle. Relationships Between Lard Production Methods, Volumes of Production, Costs and Characteristics of Lard Produced in Selected Packing Plants. Agr. Expt. Sta. Res. Bu. No. 432, Iowa State College, Ames, Iowa. Oct. 1955.

Most lard needs one or more of the following additional processes: Refining, bleaching, filtering, settling, hydrogenating, deodorizing, texturizing, or plasticizing, and treatment with antioxidants or emulsifiers. These processes, along with care in the selection of raw fats and in rendering, have improved the marketability of lard by making it possible to produce a uniform grade and high quality. However, not all lard needs special processing. In 1958, about 76 percent of the lard rendered in federally inspected plants was subjected to additional processing.

Slaughter-to-Retail Margins

Margins for loose lard from the slaughterer-renderer to the consumer in 1-pound retail packages have increased. In 1949, the retail price of lard was 19.2 cents a pound and loose lard at the renderer's plant was 11.3 cents a pound. This was a 7.9-cent margin between renderer and consumer (table 7). Ten years later, 1958, retail lard was selling for 22.6 cents a pound or 3.4 cents more than in 1949, and the marketing margin from loose to retail had increased to 11.2 cents a pound. This was an increase of 3.3 cents a pound in the marketing margin from 1949, or an average increase of 0.33 cent per year in the slaughter-retail margin over the last 10 years. Most of this increase in the loose-to-retail marketing margin was in retailing (2.2 cents a pound), while wholesaling increased 1.1 cents a pound.

Table 7.--Retail price, slaughter value (loose), and slaughter-retail margin per pound of lard in 1-pound cartons, 1949-58

Year	Price		
	Retail <u>1/</u>	Slaughterer (loose)	Slaughter-retail margin
	Cents	Cents	Cents
1949	19.2	11.3	7.9
1950	19.1	11.8	7.3
1951	24.6	16.1	8.5
1952	18.4	9.9	8.5
1953	20.2	11.9	8.3
1954	26.2	15.7	10.5
1955	20.8	10.6	10.2
1956	19.8	11.1	8.7
1957	22.7	12.4	10.3
1958 <u>2/</u>	22.6	11.4	11.2
Average ...	21.4	12.2	9.2

1/ Average prices, Bureau of Labor Statistics. Prior to 1953, BLS prices were based on 56 large cities. Beginning with 1953, BLS prices were based on a sample of 46 cities or towns of over 2,500 population.

2/ Preliminary.

Live-to-Slaughter Margins (Imputed)

Marketing margins for lard between the farmer and the slaughterer-renderer are difficult to determine, primarily because lard is a joint product as well as a small part of the total value of the products from the whole hog. When raw fat for rendering into lard is separated from the meat at the time of slaughter, a farm value cannot be accurately determined for the different products and must be imputed or estimated.

In this report the value of the equivalent of 1 pound of lard on a hog at the farm was imputed by calculating a ratio of the value of loose lard to the value of all hog products at the slaughter level and applying the same ratio to the farm value. Other alternatives could have been used. Some industry sources indicate that raw fat prior to rendering into lard is valued at 60 percent of the current price of loose lard, less the lard's portion of the cost of slaughtering. Another possible alternative is to compare farm prices of sows and other classes of hogs of comparable weight to farm prices of light-weight barrows and gilts with much less lard in an attempt to determine the price differential for the lard on the lean classes of hogs. With any method used, some assumptions are necessary and the farm value will be an imputed or estimated value. The ratio method employed in this report to derive a farm value is superior in one particular respect. It requires only one assumption--that the ratio of the value of lard to the value of all hog products is the same at the slaughter level as the equivalent amount of lard on a live hog at the farm.

Other factors which greatly affect the quality or value of lard at various levels in marketing are yield of fat by weight groups, grade and type of hogs, feed rations, location of markets, type of cutting and trimming, month of slaughter, and whether plates and fatbacks are rendered into lard or sold as pork cuts. In this study the imputed farm value for lard has been based on medium-weight barrows and gilts sold in Chicago and on the value of lard and all pork products fresh and cured at the same market each year from 1949 through 1958.

On the average, a 200- to 220-pound barrow or gilt will have about 21 pounds of raw fat per 100 pounds of live weight, which, when rendered, will yield about 15 pounds of lard. These averages will vary according to grade and weight of hog (table 2).

Prices of live hogs received by farmers and prices of all edible fresh and cured hog products at the slaughter level tend to move in the same direction. Over the last 10 years, 1949-58, the farm-to-slaughter margin averaged 3.3 cents per pound of hog (table 8). This margin was not given by quarters since lard can be stored for several months before being marketed and seasonal fluctuations in hog prices have little or no effect on lard prices. Also, slaughterers and packers buy hogs to satisfy the consumer demand for major pork products, and the value of loose lard at the slaughter level (estimated at \$259 million in 1958) is small in relation to the value of all pork products (estimated at \$4.5 billion in 1958).

Table 8.--Slaughter value, Chicago, and farm values, United States, per pound of loose lard and per 100 pounds of hogs, and imputed farm-slaughter margins, 1949-58

Year	Slaughter value			Farm value		
	Lard as :	Per 100 pounds :	Average price received :	Per :	Farm-	
	percentage:Per pound:	live weight of hogs:	by farmers per 100 :	pond :	slaughter	
	of all hog:		pounds of live hog :	of :	margin	
	products :	loose 1/ :	All hog : Lard :	All hogs:All edible hog: Lard :	lard :	(imputed)
	products :	products 2/ :	products 3/ :	products 4/ :	5/ :	6/ :
	Pct.	Dol.	Dol.	Dol.	Dol.	Ct.
	7.1	24.06	1.70	18.10	17.82	8.2
1949	11.3	1.70	18.10	17.82	8.2
1950	11.8	1.77	18.00	17.73	8.7
1951	16.1	2.42	20.00	19.70	12.2
1952	9.9	1.49	17.80	17.53	7.1
1953	11.9	1.79	21.40	21.08	9.1
1954	15.7	2.36	21.60	21.28	11.8
1955	10.6	1.59	15.00	14.78	7.1
1956	11.1	1.65	14.40	14.18	7.5
1957	12.4	1.86	17.80	17.53	8.9
1958 7/	11.4	1.71	19.90	19.60	8.6
Average	7.6	24.20	1.83	18.40	18.12	8.9
					1.33	3.3

1/ Loose lard in tank cars.

2/ Fresh and cured basis less the marketing margin between lard in 1-pound cartons and loose lard.

3/ Based on 15.02 pounds of lard rendered (per 100 pounds of hogs slaughtered) multiplied by slaughter price of loose lard.

4/ Farm value adjusted to exclude the value of inedible byproducts which is estimated at 1.5 percent of the gross farm value.

5/ Farm value of all hog products, multiplied by percentage that lard is of all hog products.

6/ Farm value of lard divided by 15.02 pounds of lard rendered from 100 pounds of live hog.

7/ Preliminary.

Included in the farmers' and slaughterers' margin are transportation, selling, slaughtering of hogs, and rendering costs of raw fat. Most farmers paid some transportation and selling costs, depending on the method by which they marketed their hogs (auctions, stockyards, commission firms, or direct). All slaughtering and rendering costs are paid by the slaughterer and renderer. While actual slaughtering and rendering costs were not assigned to the marketing margin of lard, a study of lard manufacturing indicates the cost of rendering 1 pound of lard is 1.0 and 1.2 cents per pound, depending on the method (dry, steam, open kettle) of rendering (see footnote 2).

The farm value for lard as imputed in table 8 has ranged from a low of 7.1 cents a pound in 1952 and 1955 to a high of 12.2 cents a pound in 1951. Over the last 10 years, 1949 through 1958, the imputed farm value averaged 8.9 cents per pound.

The farm-to-slaughter margin for lard as imputed herein is the average price spread between what a farmer receives for the equivalent of a pound of lard on a live hog and the slaughter value of 1 pound of loose lard (table 8).

The farm-to-slaughter margins for lard as imputed by the method described on page 18, have fluctuated from a low of 2.8 cents a pound in 1952, 1953, and 1958 to a high of 3.9 cents in 1951 and 1954. From 1949 through 1958 these margins averaged 3.3 cents a pound.

EXAMPLES OF MARKETING COSTS AND RETURNS FOR LARD

To illustrate the steps and costs in moving lard through the marketing channels to the retail level, four examples which are fairly representative of lard marketing channels have been compiled. The examples are based on actual prices at various marketing levels, from information compiled by the Department of Agriculture and the Department of Commerce. They describe the marketing of an average 210-pound barrow or gilt which yielded 32 pounds of rendered lard from:

- A. An Iowa farm to consumers in New York, February 1958.
- B. An Indiana farm to consumers in San Francisco, February 1958.
- C. An Indiana farm to an institutional consumer in New Orleans, December 1957.
- D. An Illinois farm to consumers in Chicago, December 1957.

These examples are designed to represent different marketing channels for lard and bring out the importance of variations in net returns received by farmers and various marketing agencies from November 1957 to February 1958. These examples are not intended to suggest the average returns which may be expected from the different production areas and marketing channels or from slaughter and retail outlets in the four cities or other locations. A different marketing channel or decision by a marketing agency could have a sizable effect on the estimated returns.

Returns to producers as shown in each example were imputed by the method described on page 18.

Example A.--Lard from a Hog in Iowa
to Consumers in New York

This illustration assumes that during the last week of November 1957, a hog weighing 210 pounds was shipped by truck from a farm in Iowa to the Sioux City terminal livestock market. The hog was sold to a local slaughterer at \$16.95 per hundredweight and was slaughtered immediately. The hog yielded 32 pounds of rendered lard from the raw fat when it was slaughtered. The loose lard was sold to a packer who further refined and packaged the lard in 1-pound packages (a processing-wholesaling function), shipping it to New York for distribution by a wholesale branch house in December 1957. The wholesale branch house sold the lard to a retail store for purchase by a consumer in January 1958.

	Cents per pound <u>of lard</u>
Imputed return to producer (includes marketing and transportation charges)	8.1
Return to slaughterer:	
Sale value (loose lard), November 1957	10.8
Slaughterer's margin (includes costs of slaughtering and rendering)	2.7
Return to wholesaler:	
Sale value (per case), December 1957	16.6
Wholesale margin (includes costs of packaging, refining, and transportation from Iowa to New York, 2.0 cents per pound)	5.8
Return to retailer:	
Sale value (1-pound package), February 1958	21.7
Retail margin	5.1

Example B.--Lard from a Hog in Indiana
to Consumers in San Francisco

This example describes the marketing of a medium-weight barrow or gilt sold at the Indianapolis terminal market, the latter part of November 1957. A local farmer transported the hog in his own truck to the market where it was sold to a local slaughterer. The rendered lard (32 pounds) was sold loose in a tank car to a Chicago packer who further conditioned and packaged the lard in 1-pound cartons in December. The lard was shipped by rail along with other packinghouse products to a branch house in San Francisco in December 1957. The branch house sold the lard to a retail store in January 1958 and it was purchased by a consumer in February 1958.

	<u>Cents per pound of lard</u>
Imputed return to producer (includes marketing and transportation charges)	8.5
Return to slaughterer:	
Sale value (loose lard), November 1957	11.4
Slaughterer's margin (includes costs of slaughtering and rendering)	2.9
Return to wholesaler:	
Sale value (per case), January 1958	21.0
Wholesale margin (includes costs of packaging, refining, and transportation from Indiana to San Francisco, 3.6 cents per pound)	9.6
Return to retailer:	
Sale value (1-pound package), February 1958	28.1
Retail margin	7.1

Example C.--Lard from a Hog in Indiana
to an Institutional Consumer in New Orleans

This example describes the marketing of a medium-weight hog in Indianapolis the last week of November 1957. A local slaughterer purchased the hog for slaughter at an auction market. The rendered lard (32 pounds) was shipped loose to New Orleans. The carload of loose lard, purchased by a bakery in New Orleans in November 1957 for use in their products, arrived in New Orleans early in December 1957.

	<u>Cents per pound of lard</u>
Imputed return to producer (includes marketing and transportation charges)	8.5
Return to slaughterer:	
Sale value (loose lard), December 1957	12.55
Slaughterer's margin (includes transportation from Indianapolis to New Orleans, 1.15 cents per pound)	4.05

Example D.--Lard from a Hog in Illinois
to Consumers in Chicago

This example describes the marketing of a 210-pound hog by an Illinois farmer to consumers in Chicago. The hog was transported to the Chicago

terminal livestock market by the farmer the last week in November 1957. The hog was sold to a local slaughterer for \$17.46 per 100 pounds. The raw fat trimmed from the carcass yielded 32 pounds of rendered lard which was sold to a lard processor who further refined and packaged it in 1-pound cartons. The lard was sold to a retail store through the processor-owned wholesale outlet to a chain of retail stores. The lard was delivered in case lots to the retail stores and a 1-pound package was purchased by a consumer in December 1957.

	<u>Cents per pound of lard</u>
Imputed return to producer (includes marketing and transportation charges)	8.3
Return to slaughterer:	
Sale value (loose lard), November 1957	11.2
Slaughterer's margin (includes costs of slaughtering and rendering)	2.9
Return to wholesaler:	
Sale value (per case), December 1957	15.8
Wholesale margin (includes costs of packaging, refining, and transportation to retailer)	4.6
Return to retailer:	
Sale value (1-pound package), December 1957	21.9
Retail margin	6.1

